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H. C. Ramsower, Director



ABOUT HOUSE PLANTS

BY

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THE OHIO STATE UNIVERSITY, COLUMBUS, AND UNITED STATES DEPARTMENT OF AGRICULTURE, COOPERATING

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“If”

If the plants turn yellow, perhaps

1. They are getting too much water...*see page* 4
2. They are starving for food.....*see page* 6
3. They are starving for water which
carries food*see page* 4
4. They are in a jardiniere.....*see page* 5
5. They have insects on the lower
side of their leaves.....*see page* 11

If the plants dry up and turn brown the
air is too hot and dry.....*see page* 3

If the plants turn whitish, they are suffer-
ing from red spider.....*see page* 11

If the tips of the leaves are dry, they have
been neglected.....*see pages* 4, 19

If they drop their buds.....*see page* 4

If they lose their leaves, they are suffering
from a combination of bad culture, *see pages* 3-6

If they refuse to flower.....*see page* 6

If they are resting.....*see pages* 4, 6

If they have insects.....*see page* 11

If you have a notion that something is
wrong with the roots.....*see pages* 5, 11

If you wish to make slips.....*see page* 8

If they are leggy plants.....*see page* 10

If they look healthy—keep on with your own treat-
ment and don't bother to read this bulletin!

About House Plants

Alfred C. Hottes
Ohio State University

When the snow is falling and the wintry winds blow we feel how much it means to have a warm, cozy home. We walk to the window and look at our plants; it is then that we enjoy their fresh green leaves and their gay blossoms. Then, if we have neglected to stock a few windows with them, how we regret it! Winter plants remind us of the coming spring.

As we travel along the streets and roadsides to and from our daily tasks we are cheered by the sight of a plant in a window. We know that the home has a housewife within who needs more than potatoes and meat for her food. And, if this be so, do we not believe that a plant in our home is worth two in the neighbor's or florist's window?

Our house plants are often not truly beautiful, but even so we cherish them, for we hold in our minds a picture of what they should be. They are our plants and we have rescued them from the icy winds; we trust they will grow more beautiful in the future. Of course, our delight is increased by a healthy, well-shaped plant. It is the purpose of this bulletin to point out the sorts to grow and the way to grow them.

"Luck" Is Care

You have remarked, no doubt, that certain persons have great luck with house plants, that they can grow anything without bother. This is not true. Their love of flowers has led them to give the proper position, soil, and care to the plants. Luck is generally care. Out-of-doors plants almost grow by themselves because the climate is favorable; in the house you will have to supply every requirement—soil, water, heat, air, and light. When you fail, the plants fail.

Dry Air Detrimental to Plants

Our modern homes heated with gas and hot air are not ideal for plants, but this should not discourage us; we must merely choose plants which will tolerate the conditions, or improve the conditions as much as we can. Greenhouses are heated with steam and hot water. They seem warmer than they really are because

they are generally humid. In our homes the air is dry. You have noticed that those who have good house plants have more than a few. This is partly due to the fact that conditions are proper; also, an abundance of plants increases the moisture in the air about these plants. A window full of plants is better than one plant.

Except for desert plants, most of our plants like a more moist atmosphere than we give them.

If you have reason to believe that gas is escaping and injuring your plants, stop the leak. It is equally unhealthy for you. Plants show signs of gas injury before we do.

Increasing the moisture in the air is not impossible. It may be done by placing the pots in a shallow, galvanized iron tray, made water-tight, which fits the top of a table or window ledge. Pebbles and sand placed in the tray will collect and hold the water which goes thru the pots; this water will supply moisture to the air.

If you are fond of plants, you may plan for them in building your home. Enclose with glass a small alcove which shall open into the living-room and be separated from it by glass doors thru which the plants may be seen. In such a conservatory many other plants may be grown than those usually considered as house plants.

Suggestions On Watering Plants

Plants should not be allowed to wilt before they are watered, nor should they always be watered each day. There are two general rules for watering house plants:

1. Water them when they need it. "How can I tell?" you ask. Rapid growing plants and those producing flowers in abundance require more water than plants which are resting or not in active growth. Slow growing plants stand the greatest amount of neglect in watering. There is a way to tell when plants need water. Pick up the pot and rap it with the knuckles; if the sound is dull, the plant has sufficient water, but if the pot rings, the plant is dry.

2. Water plants thoroly or not at all. Plants growing in small pots frequently are filled with roots; merely wetting the surface of the soil will result in the bottom of the pot constantly being dry. At frequent intervals most house plants should be set in a tub and allowed to soak up all the water they will take.

When the sun is shining, plants stand more water than during dull weather. Too much water in dull weather causes the buds of flowering plants to drop and the leaves to turn yellow.

Syringing

Because of the dust and dry air, sprinkling and washing the leaves is an important factor in keeping the plants in good health. It is especially beneficial in the case of ferns and large-leaved plants. Water may be best applied by the use of some sort of atomizer. Rubber plants, palms, and such plants should be washed with soap and warm water from time to time.

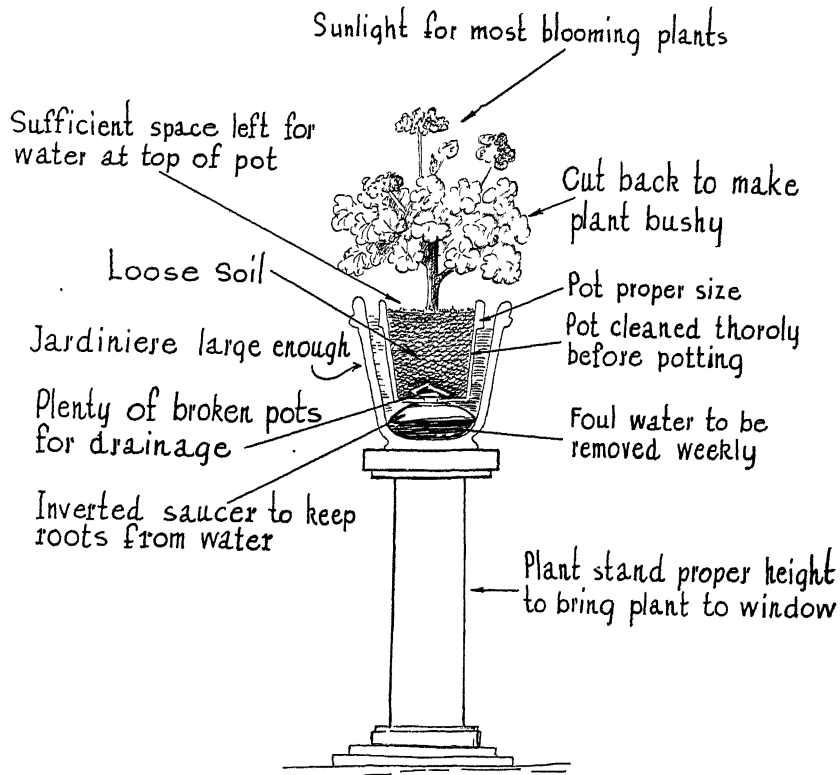


FIG. 1—Diagram of good conditions for a house plant

Jardinieres Are a Nuisance

Plants need air at their roots as much as they need it at their tops. Porous pots are used principally for this reason. The beautiful jardiniere is an evil. The necessary watering of plants day after day allows the water that runs thru the hole in the bottom of the pot to collect in the jardiniere; the water gets deeper day by day and becomes foul; soon the plant becomes ill, and finally it

dies of "wet feet." The housewife thinks that there are insects on the roots and sticks matches into the soil.

To overcome the evil of the jardiniere, choose one too large for the pot and set the pot upon an inverted saucer, so that it is raised from the bottom. Furthermore, keep the excess water emptied from the jardiniere.

Sunlight

Most flowering plants prefer sunlight. Some foliage plants thrive in the shade. It is generally disappointing to attempt to have Begonias, Sultanas, and Cinerarias blooming if they do not get some sunlight. Generally speaking, foliage plants are more successful for those persons having no sunny east, west, or south window.

Soil

The matter of soil is not nearly so important as most home gardeners believe. Make a mixture of reasonably good soil to which is added a small quantity of well-decayed manure. If the soil be heavy, add some sand or leaf mould. Large-leaved and heavy-rooting plants prefer heavy soils. Juicy-leaved plants, such as Cacti, for instance, are more at home in the soils of a sandier texture. Begonias enjoy a mixture of soil, sand, and a liberal use of leaf mould.

Fertilizers

If you have started with a soil which is reasonably good, regard the various fertilizers as appetizers. The plants should have no fertilizer unless they are growing; never when resting. A sprinkling of bonemeal over the soil in the pots during the growing season will be beneficial for most plants. Palms and ferns may be kept in the same sized pots for several years if some of the soil is removed and replaced with new soil enriched with bonemeal.

Nitrate of soda is a dangerous fertilizer to advise, but if used with caution it will be useful to encourage leaf growth and increase the size of flowers. Use a tablespoon of nitrate of soda and dissolve it in three gallons of water. Do not spray the plants with the solution, as it will burn the leaves. It is especially recommended for ferns, for Amaryllis in bud, and on rare occasions for other house plants when they are growing and healthy, but never when sickly nor resting.

Pulverized sheep manure is a good fertilizer, being dry and easily handled, but powerful. Merely sprinkle a tablespoon over the top of the pot.

Avoid using strong chemical fertilizers under patent names unless you use them as advised on the package. They are generally made up of standard fertilizing elements in a concentrated form.

Pots and Potting

Most persons use pots that are too large. Note that the florist uses pots as small as possible. Plants are more slightly in small pots. Conditions become bad when too large a pot is used; the soil becomes sour, the pot holds too much water, and the roots do not get the required amount of air. As the plants grow they may be given larger pots, but these shifts from one size to another should be gradual.

In potting plants note that the pots are made porous; keep them so by scrubbing and washing them before using. Note the hole in the bottom of the pot. This is to allow the water to pass freely from the pot. Never cork up the hole; instead, place three or four pieces of broken pots over it in such a way that the hole is kept open and will not be closed by the soil.

Never fill the pots too full of soil in repotting. Allow space at the top so that sufficient water may be applied to the plants without its running over on the floor.

If it is suspected that the soil in a pot is too wet, too dry, or infested with insects, take the plants from the pots and look at the roots. Plants are easily removed from the pots by placing the forefinger and second finger of the right hand about the plant and inverting the pot. If the pot is jarred against a table the ball of soil and roots will free itself from the pot and rest in the palm of the hand. This is so simple that anyone may do it even with large plants (see illustration on next page).

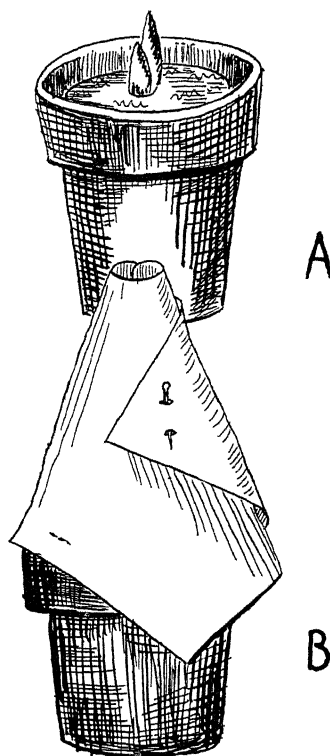


FIG. 2.—Treatment for hyacinths to make the stems grow long. A cone of paper, open at the top, is placed over the pot.

Preparing for Winter

If the plants have been planted in the garden for the summer, some care must be given them when potting. In digging the plants, many roots will be broken. To offset the root injury, the tops of the plants should be cut back accordingly. This may cause the plants to appear unsightly for a few weeks, but it is for their future betterment. Place the plants in the shade of some shrubbery to recover from the shock before bringing into the house.



(A)

(B)

FIG. 3.—Removing a plant from a pot

(A)—Place the fingers around the plant and after inverting it the edge of the pot
(B) is jarred so that the ball of earth falls from the pot

Making Slips

Every home gardener takes slips or cuttings from his plants. Properly made slips root more surely than those made haphazard. The points to consider are:

1. Make all slips from healthy plants. Don't carry on diseased or insect-infested plants. Get a new plant from the florist.
2. Make cuttings from three to four inches long. Cuttings that are too large do not root so easily.

3. Remove most of the leaves; if they are large cut off a portion from the leaves left on the cutting (see Fig. 4).
4. Remove all flowers and buds which exhaust the slip before it roots.
5. Cut thru an eye or node, for the base of the slip.
6. Place them to root in sand, which is preferable to soil because it is porous, and lessens the possibility of decay before the slips root.



FIG. 4.—A begonia cutting The light area of the leaf is removed to reduce water given off (see pages 8-9).

7. Cover the slips with newspaper to shade them. In the case of plants which are difficult to root by the ordinary methods, place a fruit jar over them.
8. When roots are a half inch long place them in pots. Use a good soil but no manure at first.
9. Do not fear cutting your plants back to make slips; they are better for the treatment.

Pot-layering

When the Rubber Plants, *Dracaenas*, or, in fact, almost any of the plants become tall and straggly, they may be pot-layered. This process is simple. Cut a small pot in two with a saw. This is easily done if a soft, poorly-burned pot is chosen (see Fig. 5, B). Next make an incision upward and three-quarters thru the

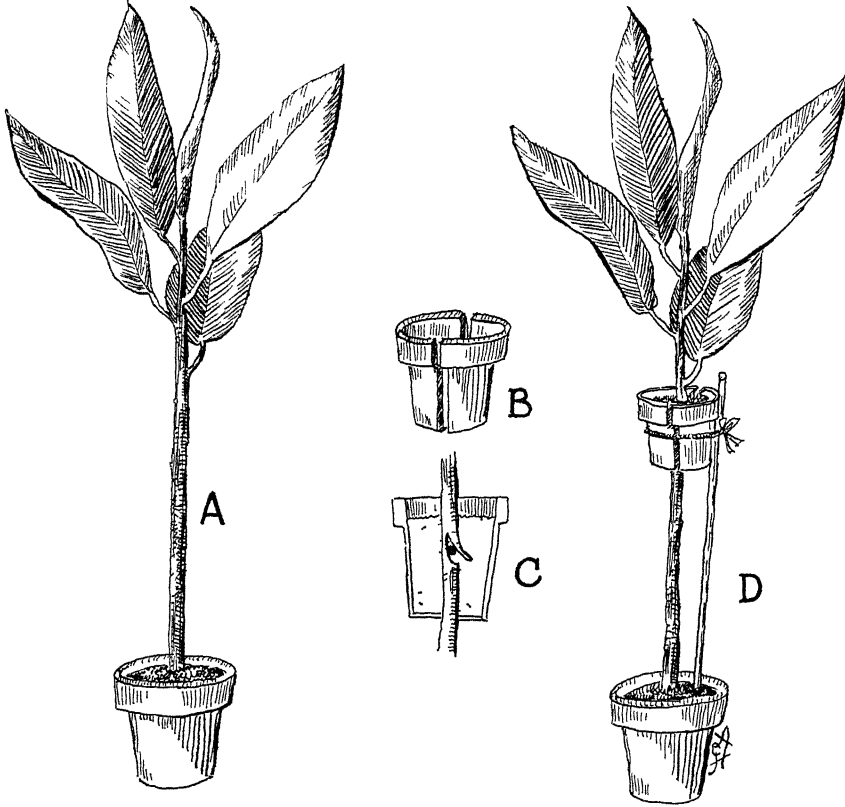


FIG. 5—Topping a rubber plant

- (A) Shows a leggy plant
- (B) Shows a pot sawed in two pieces
- (C) Shows the stem injured and the pot fitted about the stem of the plant
- (D) Shows the pot tied to a stake to keep it in place

plant stem several inches below the leaves. Hold the incision open by using a pebble or small piece of wood. Fit the pot about the stem, covering the incision. Fill it with sandy soil or sphagnum moss and provide it with a stake to keep the pot from slipping down or from causing the plant to be top heavy (see Fig. 5D). Keep the pot well watered.

This operation is usually successful when carried on in late February or March. When the plant is well rooted in the split pot,

it can be cut from the parent and potted in the usual way. Rubber plants so treated should have their leaves tied together for several weeks. The old stub will usually sprout out and produce branches which will result in a better plant than before treatment; furthermore, one has two plants in place of one.

Insects and Diseases

Seldom are house plants troubled by insects or diseases of the roots. When such seems to be the case read the general cultural notes on pages 3 to 7. There are a few insects which are very troublesome, and almost no diseases. Nicotine extract is one of the most useful repellants to keep on hand. This may be bought at seed stores.

Grayish Leaves.—Have your plants a grayish or a whitish cast, and is there a web over the tips of the branches? If so, there are red spiders upon the plants, but they are very minute and unless very bad are hardly seen. Syringe them with water. They cannot tolerate moisture in the air. They thrive in our hot, dry rooms.

White, Cottony Masses, Which Hardly Move.—Have you a Coleus? Are there white, mealy insects upon it? This is the mealy bug. Wash the bugs off with a hose or, if this is impractical, use a small brush and good strong soapsuds. Some say that if each mass is touched with a brush dipped in alcohol the trouble will be controlled.

White Specks, Some of Which Fly.—If your plants become infested with a small white fly, it will be difficult to control this trouble unless the plants are sprayed with nicotine when the insects are young. If badly attacked, throw the plant away.

Green or Brown or Black Lice.—No one who grows plants finds these plant lice, or aphids, strangers. They are always with us. Use nicotine extract in soapy water as a spray, or, if this is impractical, dip the tops of the plants into the solution.

Scales.—These hardly appear to be insects, but such they really are. Wash them off, using a stiff brush dipped in strong soapsuds or a nicotine solution.

Angle Worms.—Angle worms do not eat roots but in squirming around thru the pot fill up the drainage in the bottom of the pot with fine mud. A watering with lime water will bring them to the surface.

So-called Worms and Caterpillars.—Most insects which eat leaves and buds are not abundant indoors. The easy way of controlling them is to catch and kill them. Arsenate of lead may be used if you are squeamish.

Plants Suited to Home Conditions

Aspidistra (*Cast-iron Plant*).—The *Aspidistra* is the plant for a home where plants are usually neglected. It is not like most other plants, because it will tolerate a lack of sunlight, too much or too little water, cool or hot conditions, and dry air. The plants



FIG. 6.—*Aspidistra*—Cast-iron plant. This plant succeeds under the most adverse conditions and is, without doubt, the one plant everyone can grow.

when given good conditions are rather attractive, but few persons will care for this plant if they are successful with choicer plants. When the plants require pots too large to be ornamental, the plants may be split into small pieces, each of which may be placed in smaller pots.

Asparagus Fern.—There are two sorts of asparagus which every home should have, for they are not only beautiful as plants, but useful as a source of greenery to combine with cut flowers purchased from the florist. *Asparagus plumosus* has very fine, lacy leaves, and will climb a string, or it may be kept somewhat dwarf if it is cut back at frequent intervals. *Asparagus Sprengeri* has coarser leaves and tends to droop over the sides of a pot.

Both sorts are gross feeders and should be given a rich soil and an abundance of water; they thrive in a warm room. Toward spring, when growth starts anew, give them a dressing of well-decayed manure. As with all house plants, give them good drainage.



(A)

(B)

FIG. 7.—*Asparagus Ferns*.—(A) Sprenger's *Asparagus* is a variety which is inclined to trail downward and is good for hanging baskets. (B) Plumose *asparagus* is a lacy variety which can be trained to climb.

Plants raised from seeds sown indoors in January or February will make nice little plants for another year, and are generally preferable to those plants which have become large and have been divided into smaller pieces.

Begonia.—There are many sorts of begonias, attractive for their leaves as well as their flowers. The Angel Wing Begonia (*Begonia argenteo-guttata*), the Castor-leaved Begonia (*B. ricini-folia*), the Star Begonia (*B. heracleifolia*), the Elephant's Ear Begonia (*B. Feastii*), and the Rex Begonia, are the commonest sorts

grown for their beautiful leaves. The Ever-blooming Begonia (*B. semperflorens*), Vernon, Gracilis, Luminosa, and such sorts, together with the Lucerne Begonia, are grown for their flowers, which are borne in great profusion thru the winter.

Begonias will prefer some leaf mould mixed with the soil in which they are potted. The flowering sorts will prefer the sunshine. The others will do well in the shady window. Unless begonias are cut back at intervals they usually become tall and ungainly. Never fear to pinch out the tips to give a friend as a slip. Your generosity will be rewarded by a better plant for your own window.

Bulbs.—Bulbs are really fully developed plants when we purchase them; all we do is place them in congenial surroundings to grow. Pot them in a loose soil, water them, and place them in a cool, dark place to produce roots. Do not bring them to the window to grow until the pots are filled with roots. How shall you know? Remove the ball of earth from the pots and see for yourself (see Fig. 10). For house purposes Hyacinths, Narcissus (which includes Daffodils), Tulips, Amaryllis (see Fig. 8), and Freesias are the easiest to grow.

Some bulbs, notably the Paper-white Narcissus, the Chinese Sacred Lily, and Hyacinths, may be grown in water, pebbles, sand, or sphagnum moss. Place them firmly in the receptacle with enough water to touch the base of the bulbs. Be sure to induce the



FIG. 8.—Amaryllis. Note that the pot is small, in which case the plant blooms more profusely.



FIG. 9.—Good Begonias for the home.—(A) Lucerne Begonia, with its exquisite and large clusters of pink flowers. (B) Angel Wing Begonia, with its beautiful silver-spotted leaves. (C) The Everblooming Begonia, which is constantly covered with bloom thruout the whole winter. (D) The Fuchsia-flowered Begonia, bearing long, pendulous clusters of coral bloom. (E) The Manicata Begonia, with its large leaves splotted with gold and white. (F) The Metallic Begonia with its lustrous green-brown leaves which are red beneath.

growth of roots before the leaves are allowed to develop. This is done in the same way as for potted bulbs—that is, place them in the dark for several weeks.

Cactus.—Many persons find great interest in growing the various sorts of cacti, all of which are interesting, not only because of their peculiar form, but also on account of their extremely attractive flowering habits. Perhaps none is more popular for flowers than the Christmas or Crab Cactus (*Epiphyllum*). These plants are loaded with bright rose blossoms at Christmas. The *Phyllocactus* has wide, leaf-like stems and handsome large flowers, usually

pink in color. The Night Blooming *Cereus* delights us with its blooms which appear every few years. It is a mistaken notion that these plants bloom only every seven years.

Cacti prefer soils to which considerable sand has been added. Except when in flower they do not tolerate much water. The buds are apt to drop if given too much water during dull weather.

Calla Lily.—The *Calla Lily* is quite generally admired, but of late years few persons have grown it. The culture is interesting. A native of Egypt, it prefers an abundance of water in fall, winter, and spring, and should be baked by the sun in summer, during which season the pots may be placed on their sides out of doors until September when the bulbs are potted in new pots. The *Calla* prefers rich soil and

is benefited, while growing, by a dressing of well-decayed manure. The *Godfrey*, producing as it does a great number of flowers, is the best sort to grow.

Chrysanthemum.—The large flowered sorts of *chrysanthemums* are not successful in the garden because they bloom too late. Purchase young plants in spring from the florist, and either grow them thru the summer in the open soil of the garden or in pots. If in pots one will have to give them more care, but as they can be properly staked in the pots this method is more successful. The pots should be plunged into the soil to keep them from drying out.

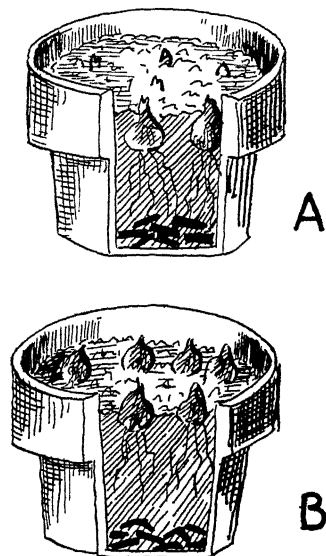


FIG. 10.—Potting bulbs. A three-quarters pot as shown is more decorative.

(A) Shows bulbs potted at proper depth, but in
(B) The bulbs are not deep enough.

If grown in the garden dig them early in September so that they may recover from the transplanting before they bloom. Do not wait until they have been frosted before bringing them into the house, altho the first frost will not really spoil them.



FIG. 11.—Screw Pine—a plant which props itself above the pots.

Watch out for aphids or plant lice; chrysanthemums are always bothered with them. You may give the plants a little feeding of sheep manure or nitrate of soda every 10 days, until the buds show color. Pinch the plants back until August if you wish them bushy, or if, on the other hand, you prefer one or two large blooms, con-

fine the plant to one or two stems and remove every indication of growth or buds as soon as they appear.

Cyclamen.—Of the many plants admired for their leaves as well as their flowers, the cyclamen is one of the best, but to have good cyclamens one must buy them from a florist, for they are rarely successfully raised from seed in the house. They require sunlight, plenty of water, and a loose soil containing leaf mould; even then, fulfilling all these requirements, you may fail.

Ferns.—It is the desire of every housewife to have a fern of some sort in the home, and rightly, for they grow in most homes in spite of some neglect and lack of light. The less finely divided leaf sorts of Boston Ferns are the most successful. The Lace Ferns have a struggle to live in our hot, dry, dust-laden homes.

Ferns generally do not prefer the full sunshine and must be kept from cold drafts. The soil which suits them best is one derived from decayed sod or leaf mould. Ferns need an abundance of water, but poor drainage and "wet feet" should be avoided. Syringe the plants often if they are to be kept healthy. They require neither beefsteak nor oysters, both of which are sometimes used by women to the discomfort of a man who reads his paper near the plant.

It is better to use bonemeal when the large fern needs more food. When a new crop of leaves start to grow give them some nitrate of soda or a dressing of well-decayed manure.

Geranium.—Geraniums are hot weather plants; they like our hot rooms and our steam heat, but they cannot be expected to produce many flowers unless they are placed in a sunny, south window, free from curtains.

Geraniums prefer heavy soil and must not be grown in pots too large else they will not bloom so profusely. Cut them back each fall to make them bushy, otherwise they will fill too much window space.

Good house plants of geraniums are obtained by taking slips in summer and growing the plants in pots until winter.

Impatiens or Sultana.—A highly desirable house plant for bloom is the dainty, juicy-stemmed Impatiens, sometimes called by old ladies, "Patience." These cheery plants when given good light are never-failing in their blooms. Even the cuttings will bloom profusely. The plants also are well shaped.

Palms.—Of all palms, the most successful and beautiful are the Kentias (*Howea*). Being placed, as they usually are, in jar-

dinieres (see page 5), they will stand considerable neglect, little light, and will thrive in our super-heated rooms. However, they prefer heavy soils, and perfect drainage. Neglect in watering is their bugbear. They grow so slowly that they seem to need little water, but that little is very much needed. It will take several weeks before injury is noticed, in that the tips of the leaves turn brown.



FIG. 12.—Kentia Palm—a standard palm, able to withstand a dry, heated atmosphere.

FIG. 13.—The Umbrella Plant—of airy gracefulness; this sedge-like plant needs great quantities of water.

Each new leaf produced by a palm should be longer than the previous leaves, otherwise the plant is not doing well. Do not place them in monster pots; unless very large the plants may be in quite small pots. Twice a year feed the plants with bonemeal, after digging some old soil from the pots.

The Fan Palm (*Latania*), was grown extensively before we began to make our rooms smaller. These palms are beautiful, but

after a few years' growth take almost as much room as a grand piano.

The Yellow-stemmed Palm (*Areca*), is beautiful; it branches from the base, and has golden-yellow stems. It will not stand the rough treatment of the Kentias.

If you have a palm see page 11, which tells about scale insects.

Primroses.—The best Primrose for the home is the Japanese Primrose, known to florists as *Primula abconica*. These familiar flowers bloom profusely in cool rooms where they are given plenty of light. Their one great fault lies in the fact that the leaves are poisonous to some persons. The effect of the poison is somewhat like that of poison ivy. If the housewife has a rash of this sort, bathe the hands with a solution of sugar of lead and give the primrose to someone who is not affected by the poison.

The Chinese Primrose is even more attractive, but is a trifle more difficult to grow. This sort has no poisonous quality, is deliciously fragrant, and produces superbly colored flowers; the stems are very brittle, however, so that the plants are easily broken. For this reason the florist does not grow them as much as formerly.

Wandering Jew.—Two old favorites of the home, the green or green and white Wandering Jew (*Tradescantia flumenensis*), and the purple and silver form (*Zebrina pendula*), are very successful. Young plants are always better than old shabby specimens, but as shoots are readily rooted either in water or in soil, these dependables furnish green for all occasions, conditions, and places.

If you continue to have trouble in raising house plants after applying the suggestions given in this bulletin, write to Professor Alfred C. Hottes, Department of Horticulture, Ohio State University, Columbus.